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FOR: CALL ORIGINATING METHOD OF MOBILE COMMUNICATION TERMINAL, MOBILE COMMUNICATION TERMINAL, AND INFORMATION SERVER APPARATUS

TRANSLATION OF DOCUMENT

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Kenji Kobayashi, a translator residing at 2-46-10, Gokonishi, Matsudo-shi, Chiba-ken, Japan, hereby states:

(1) that I know well both the Japanese and English languages;

(2) that I translated the attached document identified as corresponding to Patent Application No. 2000-163041 filed in Japan on May 31, 2000 from Japanese to English;

(3) that the attached English translation is a true and accurate translation to the best of my knowledge and belief.

DATE: September 29, 2006

BY: Kenji Kobayashi

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[Title of the Invention] CALL ORIGINATING METHOD OF MOBILE COMMUNICATION TERMINAL, MOBILE COMMUNICATION TERMINAL, AND INFORMATION SERVER APPARATUS

[What is claimed is:]

[Claim 1] A call originating method applied to a mobile communication terminal for connecting the mobile communication terminal to a service provider over network using a connection information item corresponding to a service provider and a user's present location, the method characterized by comprising:

a step of storing a plurality of connection information items corresponding to respective regional service providers, in a memory device;

a step of specifying the user's present location;

a step of retrieving, from the memory device, the connection information items corresponding to the specified user's present location and a service that is required by the user; and

a step of requiring the network to connect the mobile communication terminal to the regional service provider, using a retrieved connection information item.

[Claim 2] A call originating method applied to a mobile communication terminal for connecting the mobile communication terminal to another terminal over network using a connection information item corresponding to a destination, the method characterized by comprising:

a step of storing a plurality of connection information

items corresponding to a plurality of destinations, in a memory device;

a step of specifying a user's present location;

a step of designating a destination;

a step of retrieving a connection information item corresponding to a designated destination from the memory device;

a step of converting the retrieved connection information item to another connection information item which permits the mobile communication terminal at a specified user's location to be connected to another terminal corresponding to the designated destination; and

a step of requiring the network to connect the mobile communication terminal to another terminal corresponding to the designated destination, using a converted connection information item.

[Claim 3] A call originating method applied to a mobile communication terminal for connecting the mobile communication terminal to the connection point in case of emergency using a connection information item corresponding to the regional connection point, the method characterized by comprising:

a step of storing a plurality of connection information items to the connection points provided for each district in case of emergency;

a step of specifying the user's present location;

a step of retrieving, from the memory device, the

connection information items corresponding to the specified preset emergency connection points; and

a step of requiring the network to connect the mobile communication terminal to the network using the selected connection information item.

[Claim 4] A call originating method according to claim 1 or 2, wherein the connection information items stored in the memory device are rewritten according as the specified user's present location varies or according to the instruction input by the user.

[Claim 5] A mobile communicating terminal for connecting the terminal to a desired terminal by using a connection information item corresponding to the destination, characterized by comprising:

means for storing a plurality of connection information items corresponding to a plurality of regional service providers, in a memory device;

means for acquiring a location information item which permits a user's present location to be specified;

means for selecting, from the memory device, a connection information item corresponding to a specified user's present location and a service that is required by the user; and

means for transmitting a request for connecting the mobile communication terminal to the network, by using a connection information item selected by the selecting means.

[Claim 6] A mobile communicating terminal for connecting information item corresponding to the regional connection item to another terminal over network using a connection information item corresponding to a destination, characterized by comprising:

means for storing a plurality of connection information items corresponding to a plurality of destinations, in a memory device;

means for specifying the user's present location,

means for converting the retrieved connection information item to another connection information item which permits the mobile communication terminal at the specified user's location to connect to another terminal corresponding to the designated destination; and

means for requiring the network to connect the mobile communicating terminal to the network, using the converted connection information item.

[Claim 7] A mobile communication terminal for connecting information item corresponding to the regional connection item to another terminal over network using a connection information item corresponding to a destination, characterized by comprising:

means for storing connection information items to the connection points provided for each district in case of emergency;

means for specifying the user's present location,

means for selecting, when the emergency connection

district is designated as desired, a connection information item of the emergency connection district most suitable to the present location; and

means for requiring the network to connect the mobile communication terminal using the selected connection information item.

[Claim 8] A mobile communicating terminal for connecting information item corresponding to the regional connection item to another terminal over network using a connection information item corresponding to a destination, characterized by comprising:

means for specifying the user's present location;

means for storing dictionary data for translating a predetermined specific language into other languages and vice versa;

means for selecting a language from the other languages, based on a specified user's present location, which enables mutual translation between the specified language and the language specified to be suitably usable at the present location situation; and

means for performing translation, using retrieved dictionary data sleeted by the selecting means.

[Claim 9] A mobile communication terminal according to claim 5 or 6, characterized in that information stored in the storing means is rewritten in response to the change in the present location or in response to the designation input by the user.

[Claim 10] An information server apparatus communicating with a mobile communication terminal corresponding to a user's location, characterized by comprising:

means for storing a plurality of latest connection information items corresponding to a plurality of regional service providers;

means for receiving a request for requesting latest connection information items corresponding to the user's location,

means for retrieving requested connection information items for connecting the specified present location where the most preferable service provider is provided, and

means for providing, via a predetermined network, the predetermined service provider with the latest connection information items stored in the storing means.

[Detailed Description of the Invention]

[0001]

[Technical Field of the Invention]

The present invention relates to a portable mobile communication system such as cdmaOne that can be used globably, a call originating method for the communication system and an information server apparatus for providing information to the communication system.

[0002]

[Prior Art]

Conventional mobile phones adopt different

communication schemes in different countries. For this reason, mobile phones that are manufactured for use in Japan can be used only in Japan. Recently, with the advent of a communication scheme called cdmaOne, mobile phones of this communication scheme will be usable soon all over the world. Phones of cdmaOne are now usable in Japan and Hong Kong (April 1, 2000). In the near future those phones will be usable in other Asian countries and the U.S.

[0003]

When voice communications using a single mobile phone are allowed not only in a given country but also in a plurality of countries, the following problems are posed.

[0004]

A telephone number that the user frequently dials is stored in the mobile phone itself as an abbreviated dialing number. For example, if "044-549-xxxx" is stored, a call can be placed within Japan but cannot be placed from Hong Kong.

[0005]

Hence, a number that indicates an international call and a country code of Japan must be appended to the aforementioned telephone number, and the first "0" of a city code must be removed. For example, when the user dials the aforementioned telephone number from the U.S., he or she must dial "011 (International number identification code)-81 (country code of Japan)-44-549-xxxx". In this case, the international number identification code varies depending on countries. Upon calling from the U.S. to a country other

than the U.S., "011" must be appended as described above; upon calling from Japan to abroad, "001" or other international dialing numbers must be appended. In this manner, telephone numbers registered in advance such as abbreviated dialing numbers cannot often be used depending on countries from which the user originates a call.

[0006]

In such cases, the user can dial a full telephone number by appending the international number identification code and country code thereto without using an abbreviated dialing number. But since the user normally uses abbreviated dialing number, he or she cannot often remember the full telephone number. Also, a very long telephone number appended with the international number identification code and country code often leads to pushing a wrong number.

[0007]

The same problem is posed when the user calls upon emergency such as fire, accidents, or the like. When the user calls an ambulance upon disease, accident or the like, he or she can dial "119" in Japan but "999" in the U.S. In this manner, emergency call numbers differ depending on countries. However, at the critical moment, the user who is in the U.S., often dials "119" for Japanese since he or she is upset and cannot remember the correct number. Furthermore, even when the user dials "999", since a foreign operator answers, it is difficult for a user who is not a fluent speaker of English to explain the emergency contents.

Travelers often have booklets that give the telephone numbers of a local tourist office, a hospital where they speak in their mother language, and the like. However, the user normally leaves such booklet in the hotel or cannot find it from baggage at the critical moment.

[0008]

Since network providers such as AOL (America On Line) and the like have connection points worldwide, the user can access the Internet anywhere on the globe, and can exchange e-mail messages, and the like. However, a user terminal is normally set with a connection point closest to a place where he or she most frequently uses the terminal. Once he or she goes abroad, the connection point set in the user terminal must be changed. At this time, the user cannot easily find out a connection point closest to the current location or a cheapest connection point.

In Japan, the user may select the name of the location where he or she stays if the location has its proper name. If not, on the contrary, it is a problem whichever location name to register. If it concerns other countries than Japan, it is hard to determine whichever location name to register.

[0009]

[Object of the Invention]

In this manner, the user cannot place an international call using a telephone number registered as an abbreviated dialing number in the conventional mobile communication terminal such as a mobile phone and the like, since

international number identification code, country code, and the like are different in different countries.

[0010]

When the user wants to receive a telephone service in his or her mother language upon emergency, he or she cannot easily call a local service provider which provides such service.

[0011]

Furthermore, the user cannot easily access a connection point closest to his or her current location or a cheapest connection point to a network such as the Internet or the like anywhere he or she wants.

[0012]

That is, the conventional mobile communication terminal such as a mobile phone or the like has a problem in that the user cannot easily find out a connection point corresponding to the current user location.

[0013]

The present invention has been made in view of the above problems, and it is an object of the present invention to provide a call originating method for calling mobile communication terminal which can perform connection to the communication destination with ease corresponding to the current location of the user, and a mobile communication terminal using the method.

[0014]

It is another object of the present invention to

provide an information server apparatus that provides to such a mobile communication terminal latest communication information items used to connect a service provider of user's choice corresponding to the user's location.

[0015]

That is, according to the present invention, the user can receive a telephone service including international connection, emergency services, etc., with use of previously registered telephone number, from anywhere and from any country.

[0016]

Furthermore, the user can easily access a connection point closest to his or her current location or a cheapest connection point to a network such as the Internet or the like.

[0017]

Furthermore, the user, wherever he or she lives, in particular, when in overseas, dictionary data stored in the mobile communication terminal is useful for making easy the translation of a document between his or her mother country language and the local language.

[0018]

[Means for Achieving the Object]

According to the present invention, there is provided a call originating method applied to a mobile communication terminal for connecting the mobile communication terminal to a service provider over network using a connection

information item corresponding to a service provider and a user's present location, the method comprising: storing a plurality of connection information items corresponding to respective regional service providers, in a memory device, specifying the user's present location; retrieving, from the memory device, the connection information items corresponding to the specified user's present location and a service that is required by the user; requiring the network to connect the mobile communication terminal to the original service provider, using a retrieved connection information item.

[0019]

According to the present invention, connection to the network is requested upon selecting connection information to the service provider providing service that the user wishes to have. Therefore, connection to the communication party the user wants to communicate can be performed easily.

[0020]

According to the present invention, there is provided a call originating method applied to a mobile communication terminal for connecting the mobile communication terminal to another terminal over network using a connection information item corresponding to a destination, the method comprising: storing a plurality of connection information items corresponding to a plurality of destinations, respectively, in a memory device, specifying a user's present location; designating a destination; retrieving a connection

information item corresponding to a designated destination from the memory device; converting the retrieved connection information item to another connection information item which permits the mobile communication terminal at a specified user's location to be connected to another terminal corresponding to the designated destination; and requiring the network to connect the mobile communication terminal to another terminal corresponding to the designated destination, using a converted connection information item.

[0021]

According to the present invention, connection information items (abbreviated dial and registered telephone number, for example) to the communication party with whom the user wishes to have communication is compiled according to the location of the user, and thereafter, connection with the network is requested (for example, abbreviated dialing is available even from abroad). Therefore, connection to a communication party with whom the user wishes to communicate can be done easily corresponding to the location of the user.

[0022]

According to the present invention, in a call originating method applied to a mobile communication terminal for connecting the mobile communication terminal to the connection point in case of emergency using a connection information item corresponding to the original connection point, the method comprises: storing connection information

items to the connection points provided for each district in case of emergency; specifying the user's present location; retrieving, from the memory device, the connection information items corresponding to the specified preset emergency connection points; and requiring the network to connect the mobile communication terminal to the network connect the mobile communication terminal to the network using the selected connection information item.

[0023]

According to the present invention, connection to the network is requested upon selecting connection information to an emergency connection destination of respective region corresponding to the location of the user (for example a service provider where mother language can be spoken in overseas). Therefore, connection to the communication party the user wishes to communicate can be performed easily.

[0024]

According to the present invention, there is provided a mobile communicating terminal connecting the terminal to a desired terminal by using a connection information item corresponding to the destination, comprising: means for storing a plurality of connection information items corresponding respectively to a plurality of regional service provider in a memory device; means for acquiring a location item which permits a user's present location to be specified; means for selecting, from the memory device, a connection information item corresponding to a specified

user's present location and a service that is required by the user; and means for providing the mobile communicating terminal that asks for the connection with the network by using the selected connection information item, with the latest connection information items stored in the storing means and provided to the required service providers, via a predetermined network.

[0025]

According to the present invention, therefore, the latest connection information items to the requested service provider are provided through the regional service provider to the user wherever he or she is.

[0026]

According to the present invention, there is provided a mobile communication terminal for connecting information item corresponding to the regional connection item to another terminal over network using a connection information item corresponding to a destination, comprising: means for specifying the user's present location; means for storing dictionary data for translating a predetermined specific language into other languages, and vice versa; means for selecting a language from the other languages, based on a specified user's present location, which enables mutual translation between the specified languages and the languages specified to be suitably used at the present locational situation; and means for translating by using retrieved dictionary data items selected by the selecting

means.

[0027]

According to the present invention, dictionary data for translating a language used in the user's mother country into a language used in the country where the user stays, and vice versa, are selected in advance according to the user's present location. Therefore, documents or the like can be easily translated as the need arises by using the dictionary data. For example, the contents of the web page written in a foreign language, the digital electronic message received or to be transmitted, etc., can be translated. It is also possible to refer for the term hard to understand the meaning.

[0028]

[Embodiments of the Invention]

Hereinafter, embodiments of the present invention will be described with reference to the accompanying drawings.

[0029]

(First Embodiment)

FIG. 1 shows an example of the arrangement of principal part of a mobile communication terminal (e.g., a mobile phone, PHS, or the like) according to the first embodiment of the present invention. The mobile communication terminal shown in FIG. 1 can communicate with terminals scattered worldwide using region-dependent telephone numbers (like those for a telephone network) via a network connected.

[0030]

As shown in FIG. 1, the mobile communication terminal is constructed by connecting a connection designation device 1, connection information storage 2, selector 3, input device 4, output device 5, location information acquiring device 7, and transceiver 8 to a controller 9.

[0031]

The connection information storage 2 stores, e.g., location information of connections points to a network such as the Internet or the like, and information (e.g., telephone numbers) required to connect to the connection point as connection information.

[0032]

The transceiver 8 sends/receives information by connecting to a telephone network using a wireless communication scheme such as cdmaOne or the like. The transceiver 8 communicates with a location information server apparatus 10 (e.g., base station in case of cdmaOne) that provides information for specifying the current location of the user.

[0033]

The location information acquiring device 7 specifies the current location of the user on the basis of the radio wave strength or the like measured when the transceiver 8 communicates with the location information server apparatus 10, and holds location information of the specified current location.

[0034]

The connection designation device 1 is constructed of key operation section and the like and used by the user to input a telephone number, a connection designation or the like to the Internet or the like.

[0035]

The selector 3 selects connection information best suited to the current location of the user from those stored in the connection information storage 2 on the basis of the location information acquired by the location information acquiring device 7.

[0036]

The input device 4 comprises, e.g., a keyboard, microphone, and the like. The input device 4 is used to input text to be sent as an e-mail message, and to input a voice for conversation.

[0037]

The output device 5 comprises a display, loudspeaker, and the like, and outputs information such as voice, data, and the like including menu items for selection/designation, a line connection state, a received voice, e-mail messages received or to be sent, and the like.

[0038]

The controller 9 controls the aforementioned devices, and executes create and send/receive processes of e-mail messages, and the like. Upon receiving a user's connection request from the connection designation device 1, the

controller 9 executes a control process for sending a connection request (originating a call) to a network (e.g., a telephone network) preferentially using the connection information selected by the selector 3 (using the selected connection information unless a special instruction or the like is input by the user upon using the selected connection information).

[0039]

When the user inputs a connection instruction to a desired communication partner from the connection designation device 1, the mobile communication terminal issues a request for requesting the mobile communication terminal to connect to the telephone terminal under the control of the controller 9. Upon completion of line connection with the desired communication partner, information such as a voice, text, or the like input from the input device 4 is sent from the transceiver 8. On the other hand, when the transceiver 8 receives information such as a voice, text, or the like, that information is output to the output device 5.

[0040]

A case will be exemplified below wherein the communication scheme is cdmaOne. In this case, the location of the mobile communication terminal is specified via communications with a base station. However, the present invention is not limited to such specific scheme. For example, the location of the mobile communication terminal

may be specified via communication with a satellite using a GPS system. In this case the location information server apparatus 10 corresponds to a GPS satellite and ground base station, and the transceiver 8 and the location information acquiring device 7 correspond to a GPS receiver.

[0041]

FIG. 2 shows the flow of a connection point select process in this embodiment. The location information used to specify the current location of the mobile communication terminal is acquired in two cases, i. e., it is required periodically and when the user issues a connection instruction to the Internet to execute a mail process. FIG. 2 shows the processing flow after location information is acquired in these cases.

The controller 9 holds a telephone number of the connection point that is used currently, and issues a connection request to that connection point using the held telephone number. This telephone number is rewritten as follows.

[0042]

The location information acquiring device 7 acquires the current location Xt, Yt) via communications with the location information server apparatus 10 (step S101).

The specifying method of the location information in the location information acquiring device 7 is basically the same as that of the seismic center. More specifically, circles obtained by converting the strength of radio waves

received from a plurality of (three in most cases) base stations into distances are drawn, and the overlapping portion of the three circles is calculated as the current location.

[0043]

The distance between the current location (Xt, Yt) and old location (Xt-1, Yt-1) is calculated. It is checked if the calculated distance is larger than a predetermined value (α in this case) (step S102).

If the distance between the current and old locations is not larger than α, since the location of the mobile communication terminal has not moved much from the old one, the connection point need not be changed in such case.

[0044]

If the distance is larger than α, since the current connection point must be changed, the flow advances to step S103.

[0045]

The connection information storage 2 stores a connection point table, as shown in FIG. 3(a). This connection point table registers location information of a plurality of connection points of respective regions set by a provider who provides Internet connection services, and the telephone numbers of these connection points.

[0046]

In step S103, the selector 3 compares the location information of the current location acquired by the location

information acquiring device 7, and location information of each of connection points stored in the connection information storage 2, and selects a connection point closest to the current location (Xt, Yt).

For example, the selector 3 calculates the distance between the current location (Xt, Yt) and location information (Xn, Yn) (n = 1, 2, 3, …) of each of the connection points and selects a connection point with the smallest distance. That is, the selector 3 selects a connection point that satisfies Min distance ((Xt, Yt) - (Xn, Yn)) (n = 1, 2, 3, …).

[0047]

Note that the connection information storage 2 may store a connection point table shown in FIG. 3(b). The connection point table shown in FIG. 3(b) registers location information of each of a plurality of connection points, their telephone numbers, and other parameters e.g., connection fees or the like. The selector 2 may select a connection point with a minimum combination of the distance difference and parameter dsn (n = 1, 2, 3, …). More specifically, the selector selects a connection point which satisfies Min (W1·distance ((Xt, Yt) - (Xn, Yn)) + W2·dsn) (n = 1, 2, 3, …) using predetermined weighting coefficients W1 and W2.

[0048]

The selector 2 then rewrites the current connection point by the telephone number of the selected connection

point (step S104).

For example, assume that the telephone number of the connection point of Tokyo, Kawasaki, Yokohama, or the like in Japan is held as the current connection point of the mobile communication terminal, and the user has traveled to New York together with the mobile communication terminal. At this time, the process is executed to rewrite the current connection point by the telephone number of a connection point of New York closest to the location of the user.

[0049]

Thereafter, when the user inputs a connection instruction to the Internet from the connection designation device 1, the controller 9 connects to the Internet using the rewritten telephone number of the connection point. That is, if the user is currently in New York, the mobile communication terminal connects to the Internet using the telephone number of the connection point of New York. Therefore, the user can connect the mobile communication terminal to the Internet from a connection point at the lowest fee.

When the user goes back to Japan again together with the mobile communication terminal, the process in FIG. 2 is executed, and the current connection point is written by the telephone number of a connection point in Japan which is closest to the location of the user, eliminating the need of setting the current connection point.

[0050]

If it is determined in step S102 that the distance between the previously acquired location information and currently acquired location information is large, and the current connection point must be changed, the user may be informed of that state (a message may be output from, e.g., the output device 5). After user's permission, the current connection point may be changed.

[0051]

In the above description, the connection point table is prepared in correspondence with an arbitrary region. In practice, however, connection point table, for example, may be prepared in units of regions (or countries), and the table itself may be rewritten in correspondence with a region to which the current location belongs.

If it is determined in step S102 that the distance between the current and old locations is large, and the user has moved outside Japan, the controller rewrites the connection point table of Japan stored in the connection information storage 2 by the readout connection point table of the other country.

[0052]

Alternatively, the connection information storage 2 may store a plurality of connection point tables corresponding to regions, and a connection point table of a region near the location indicated by the acquired location information may be selected.

[0053]

Furthermore, as shown in FIG. 9, the transceiver 8 may communication with a server 100 that provides a latest connection point table to the user to acquire the latest communication point table according to the designation input by the user, for example. It is therefore possible to rewrite the connection point table stored in the connection information table 2 by making use of the latest communication point table.

[0054]

As described above, according to the above embodiment, the user, wherever he or she is, can access a connection point closest to his or her current location or to a network such as the Internet without any load specifically charged.

[0055]

In the embodiment described above, the connection information storage 2 stores the communication point table of the service providers that provide connection service to the Internet.

In the following, a case will be described where the connection information storage 2 stores a table of regional connection points in case of emergency.

[0056]

Note that the connection points in case of emergency are those to service provider from which the user can receive emergency services in his or her mother language upon emergency while he or she is abroad. For example, in

Japan as the motherland of the user, "119" is a fire engine/ambulance call, and "110" is a police call. When the connection information table 2 stores the table of connection points in case of emergency, the user can receive a service corresponding to the purpose of an emergency call in the current location (country) of the user by only dialing "119" or "110" as in emergency in Japan.

That is, as shown in FIG. 4, the table of connection points in case of emergency registers the location information and telephone numbers of service providers of each region corresponding to the telephone numbers (e.g., "119", "110", and the like in Japan) of service providers in the user's motherland. More specifically, the telephone numbers of service providers of each region (country), which provide the same services as those of the service providers in the user's motherland, and their location information are registered in association with the telephone numbers of the service providers in the user's motherland.

The mobile communication terminal acquires the latest location information (current location) of the user in accordance with the flow chart shown in FIG. 2 as in the embodiment described above (step S101). Then, the telephone numbers of regional service providers corresponding to the service providers in the user's motherland are selected from the table shown in FIG. 4 (steps S102 and S103). The controller 9 holds the selected telephone numbers of regional service providers corresponding to those of the

service providers in the user's motherland. Every time the regional service providers are changed in the processes in steps S102 and S103, the controller 9 updates the telephone numbers of regional service providers corresponding to those of the service providers in the user's motherland (step S104).

[0057]

If a connection instruction to a network, i.e., a connection instruction to a connection point (e.g., telephone number 119 or 110) is input at the connection designation device 1 (if the user dials "119" or "110"), the input device 4 originates a call using the telephone number of the regional service provider corresponding to the instructed telephone number.

[0058]

As described above, according to the embodiment, the user can easily perform connection to the communication destination, even in oversees, to his or her advantage.

[0059]

(Second Embodiment)

The second embodiment of the present invention will be explained below focusing on differences from the first embodiment. The second embodiment will explain a mobile communication terminal that automatically appends an intentional number identification code, country code, and the like to a telephone number, pre-stored as an abbreviated dialing number.

[0060]

FIG. 5 shows an example of the arrangement of a mobile communication terminal (e.g., a mobile phone, PHS, or the like) according to the second embodiment. Only differences from FIG. 1 will be explained below. More specifically, a connection information converter 13 is connected to the controller 9 in place of the selector 3 in FIG. 1, and the connection information storage 2 stores abbreviated dialing numbers and full telephone numbers of the abbreviated dialing numbers in association with the abbreviated dialing numbers.

[0061]

The connection information converter 13 converts a telephone number by appending an international identification code, country code, and the like into an international telephone number in accordance with the current location of the user.

[0062]

The connection information storage 2 stores a table of abbreviated dialing numbers shown in, e.g., FIG. 6. This table registers full telephone numbers in association with abbreviated dialing numbers. In the table of abbreviated dialing numbers shown in FIG. 6, a country code (e.g., "81" for Japan) and a rule upon converting into an international telephone number are registered in association with the abbreviated dialing numbers.

The conversion rule into an international telephone

number is, for example, to remove first "0" of city code.

[0063]

Note that the country code and the rule upon converting into an international telephone number are registered in association with the abbreviated dialing numbers, but the present invention is not limited to such specific table. For example, an international number identification code held by the connection information converter 13 may be registered in association with the abbreviated dialing numbers.

[0064]

The connection information converter 11 stores a table which registers country names, representative locations, and international number identification codes in units of countries, as shown in FIG. 7. The table shown n FIG. 7 is used upon converting a telephone number into an international telephone number.

[0065]

The international call origination process will be explained below with reference to the flow chart shown in FIG. 8.

[0066]

If a call origination designation is input from the connection designation device 1 when the user dials a given abbreviated dialing number (step S200), the location information acquiring device 7 acquires location information (Xt, Yt), as described above (step S201). The connection information converter 13 compares the acquired location

information with the location information of each country shown in FIG. 7 to check if the user is in his or her country (step S202).

If it is determined that the user is in his or her country, the controller 9 reads out a full telephone number corresponding to the input abbreviated dialing number from the table (see FIG. 6) stored in the connection information storage, and originates a call using the readout telephone number (step S205). That is, if abbreviated dialing number "1" input as a telephone number corresponding to this abbreviated dialing number is "044-549-xxxx", a call is placed using that telephone number.

[0067]

If it is determined in step S202 that the user is not in his or her country, the connection information converter 13 selects a country most suitable for the acquired location information (e.g., a country having location information closest to the acquired location information) from the table shown in FIG. 7 (step S203). The connection information converter 13 reads out an international number identification code of the selected country from the table shown in FIG. 7. Also, the converter 13 reads out a full telephone number designated by the abbreviated dialing number, and the corresponding country code and conversion rule from the table shown in FIG. 6 (step S204). For example, assume that a full telephone number corresponding to abbreviated dialing number "1" is "044-549-xxxx" and the

current location of the user specified by the acquired location information is the U.S. In this case, the connection information converter 13 changes city code "044" of that telephone number to "44", and appends international number identification code "011" and country code "81" of Japan to that telephone number. Finally, the telephone number is converted into "011 (international number identification code)-81 (country code of Japan)-44-549-xxxx". The controller 9 originates a call using the converted telephone number (step S205).

[0068]

Conversely, if a telephone number registered as an abbreviated dialing number is an international telephone number from Japan to the U.S., it is "001-1-212-944-1318", for example. Assume that the current location of the user specified by the acquired location information upon dialing this abbreviated dialing number is the U.S. In this case, the connection information converter 13 converts a full telephone number corresponding to the abbreviated dialing number into "212-944-1318" by removing international number identification code "001" and country code "1" of the U.S. from that number. In this case, the connection information storage 2 can pre-store a conversion rule for converting an international telephone number into a local telephone number for each country.

[0069]

As described above, according to the second embodiment,

the user can place an international call using a telephone number stored as an abbreviated dialing number in his or her mobile phone anywhere in the world. That is, the user need only select an abbreviated dialing number to place an international call, and need not re-input such a long number string that readily leads to errors as an international telephone number. Hence, the load on the user upon placing an international call can be reduced.

[0070]

(Third Embodiment)

The third embodiment of the present invention will be described below focusing on differences from the first and second embodiments.

[0071]

FIG. 10 shows an example of the arrangement of a mobile communication terminal (e.g., a mobile phone, PHS, or the like) according to the third embodiment, and only differences from FIG. 1 will be explained below. More specifically, a language selector 14 is connected to the controller 9 in place of the selector 3 in FIG. 1, and a dictionary data storage 15 is connected in place of the connection information storage 2 in FIG. 1.

[0072]

The language selector 14 selects a language used in a country corresponding to location information acquired by the location information acquiring device 7 on the basis of that location information. For this purpose, the language

selector 14 stores a table which registers representative locations and official languages in association with country means.

[0073]

The dictionary storage 15 stores dictionary data that allows mutual translation between a specific language (e.g., user's mother language) and other languages. The dictionary data storage 15 stores dictionary data which allows mutual translation between the language selected by the language selector 14 and the specific language (e.g., user's mother language), so that the user can access that data.

[0074]

The controller 9 comprises a translation engine (translation processor) 16 which translates the contents on a web page, text, or the like, which is designated by the user, using the dictionary data (the language selected by the language selector 14) and the specific language (e.g., user's mother language) stored in the dictionary data storage 15.

[0075]

After the current location is specified (location information is acquired), the language selector 14 compares the acquired location information and location information of each country obtained from the table to check if the user is in his or her country. If it is determined that the user is in his or her country, the processing ends.

If it is determined that the user is not in his or her

country, a country most suitable for the location information of respective countries is selected and, as a result, the language of that country is selected. For example, when the user whose mother language is Japanese is currently staying in the U.S., the language selector 14 selects English.

[0076]

At this time, there are stored in the dictionary data storage 15 dictionary data that allows mutual translation between the language selected by the language selector 14 and the specific language (e.g., user's mother language), so that the user can access that data as needed.

[0077]

In this arrangement, when the user inputs a local word, the meaning of which is to be checked, from the input device 4, and designates to look up a dictionary, the dictionary data stored in the dictionary data storage 15 is searched for a word in the user's mother language corresponding to the input word. Then the search result is displayed on a display.

[0078]

The controller 9 translates Japanese text input from the input device 4 into English in accordance with a user's instruction. The controller 9 displays the translation result on a display as the output device 5.

Furthermore, the controller 9 translates the contents of a web page of the Internet received via the transceiver 8

in accordance with a user's instruction into Japanese, and displays the translation result on a display as the output device 5.

[0079]

As described above, the language selector 14 automatically selects a dictionary of a language corresponding to the current visiting country of the user. Therefore, the user can retrieve or automatically translate words that he or she cannot understand, using an electronic dictionary of the language used in the current location of the user. Also, the user can easily translate the contents of a web page or an e-mail message to be received/sent, which is described in a local language, into the mother language in accordance with the current visiting region (country) of the user.

[0080]

While the present invention is described above with reference to the first to third embodiments, the present invention is not restricted thereto, and the above embodiments can be altered or modified in many different ways of combinations of the items. That is, the above embodiments include various steps of inventive items, and various inventions can be constituted by combining these items adequately. Furthermore, even if some constitutional items are eliminated from those used in the embodiments, and if the advantages (or at least one of the advantages) can be achieved, the constitution without that constitution item

can be established as an invention item.

[0081]

[Advantage of the Invention]

According to the present invention, as described above, connection to a communication party with whom the user wishes to communicate can be done easily, corresponding to the location of the user.

[0082]

Further, the latest connection information items are provided to the regional service provider so as to enable the user to have contact with a desired service provider.

[Brief Description of the Drawings]

[FIG. 1]

FIG. 1 is a block diagram showing an example of the arrangement of a mobile communication terminal according to the first embodiment of the present invention.

[FIG. 2]

FIG. 2 is a flow chart for explaining a select process sequence of connection information depending on location information.

[FIG. 3]

FIG. 3 shows tables of connection points, which are stored in a connection information storage.

[FIG. 4]

FIG. 4 is a table of connection points in case of emergency, which is stored in a connection information storage.

[FIG. 5]

FIG. 5 is a block diagram showing the arrangement of a mobile communication terminal according to the second embodiment of the present invention.

[FIG. 6]

FIG. 6 is a table of abbreviated dialing numbers, which is stored in a connection information storage.

[FIG. 7]

FIG. 7 is a table used when converting a given telephone number into that suitable for an international call, indicating country names, locations and international number identification codes.

[FIG. 8]

FIG. 8 is a flow chart for an international call originating process.

[FIG. 9]

FIG. 9 is a block diagram showing the arrangement of a mobile communication terminal according to a modification of the first embodiment, which terminal acquires a table of latest connection information stored in the connection information storage via communications with a service server.

[FIG. 10]

FIG. 10 is a block diagram showing an example of the arrangement of a mobile communication terminal according to the third embodiment of the present invention.

[Explanation of Reference Symbols]

1 ... Connection designation device,

2 … Connection information storage,

3 … Selector,

4 … Input device,

5 … Output device,

7 … Location information acquiring device,

8 … Transceiver,

9 … Controller,

10 … Location information server apparatus,

13 … Connection information converter,

14 … Language selector,

15 … Dictionary data storage,

16 … Translation engine (translation processor),

100 … Service server.

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NAME OF DOCUMENT DRAWINGS

FIG. 1

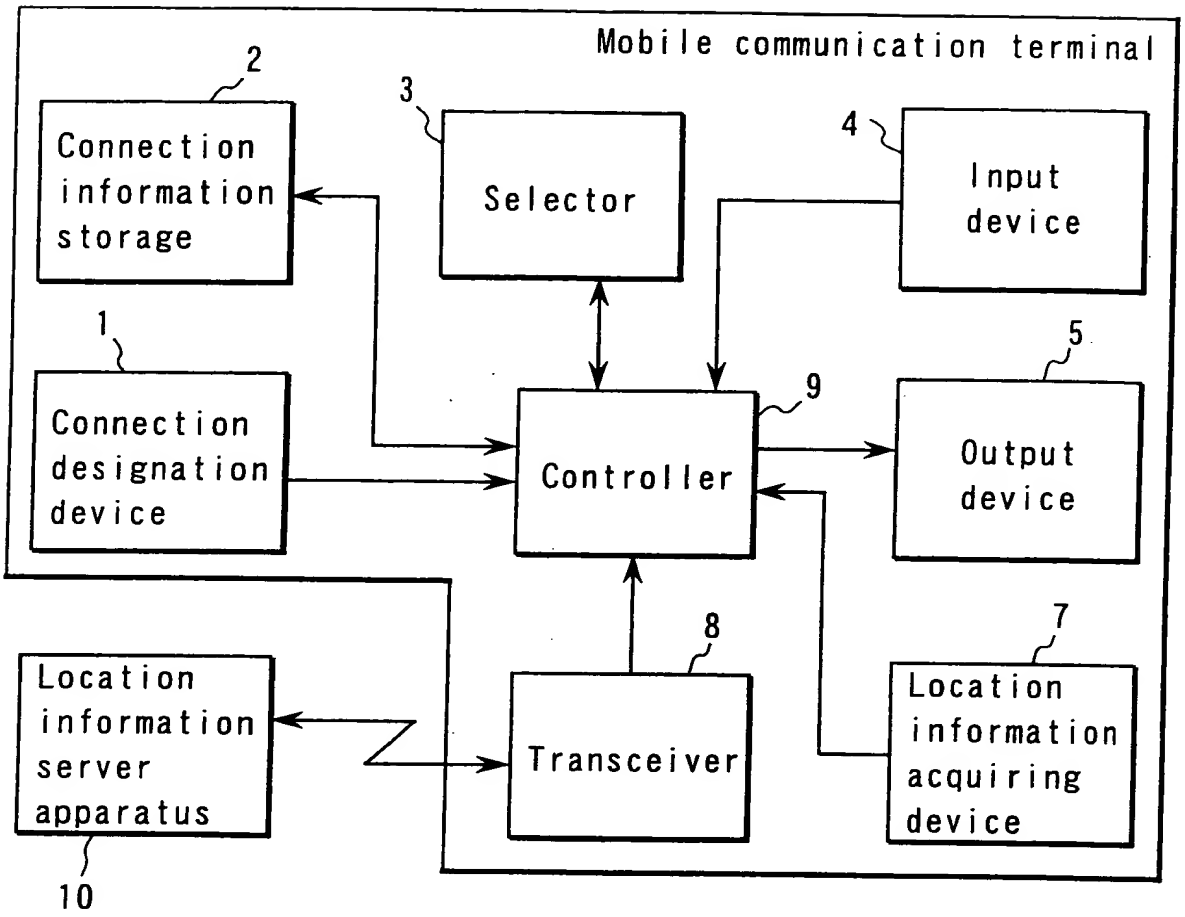


FIG. 2

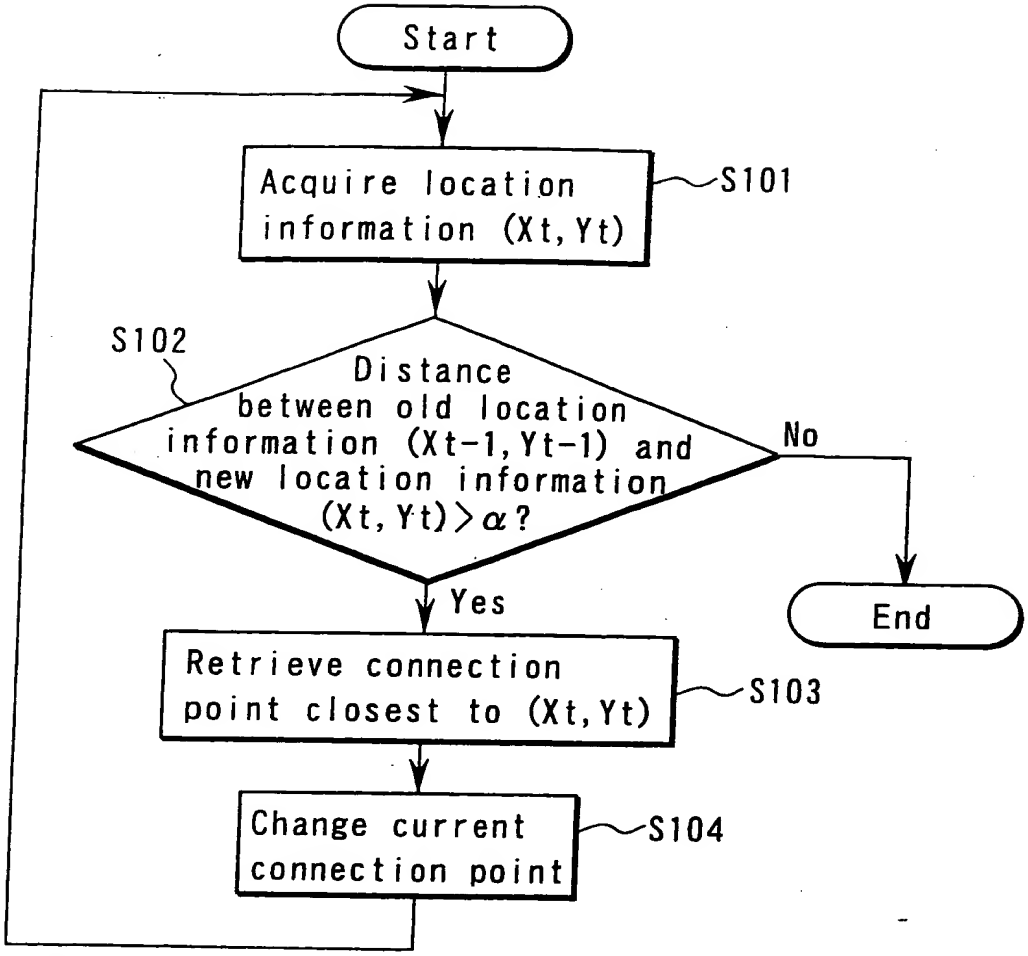


FIG. 3

(a)

Connection point	Location	Telephone number
PR1	(X1, Y1)	TEL1
PR2	(X2, Y2)	TEL2
PR3	(X3, Y3)	TEL3
:	:	:

(b)

Connection point	Location	Parameter	Telephone number
PR1	(X1, Y1)	ds1	TEL1
PR2	(X2, Y3)	ds2	TEL2
PR3	(X3, Y3)	ds3	TEL3
:	:	:	:

FIG. 4

Connection point in case of emergency

Connection point	Location	Telephone number
119	(X1, Y1)	TEL1
119	(X2, Y2)	TEL2
110	(X3, Y3)	TEL3
110	(X4, Y4)	TEL4
:	:	:

FIG. 5

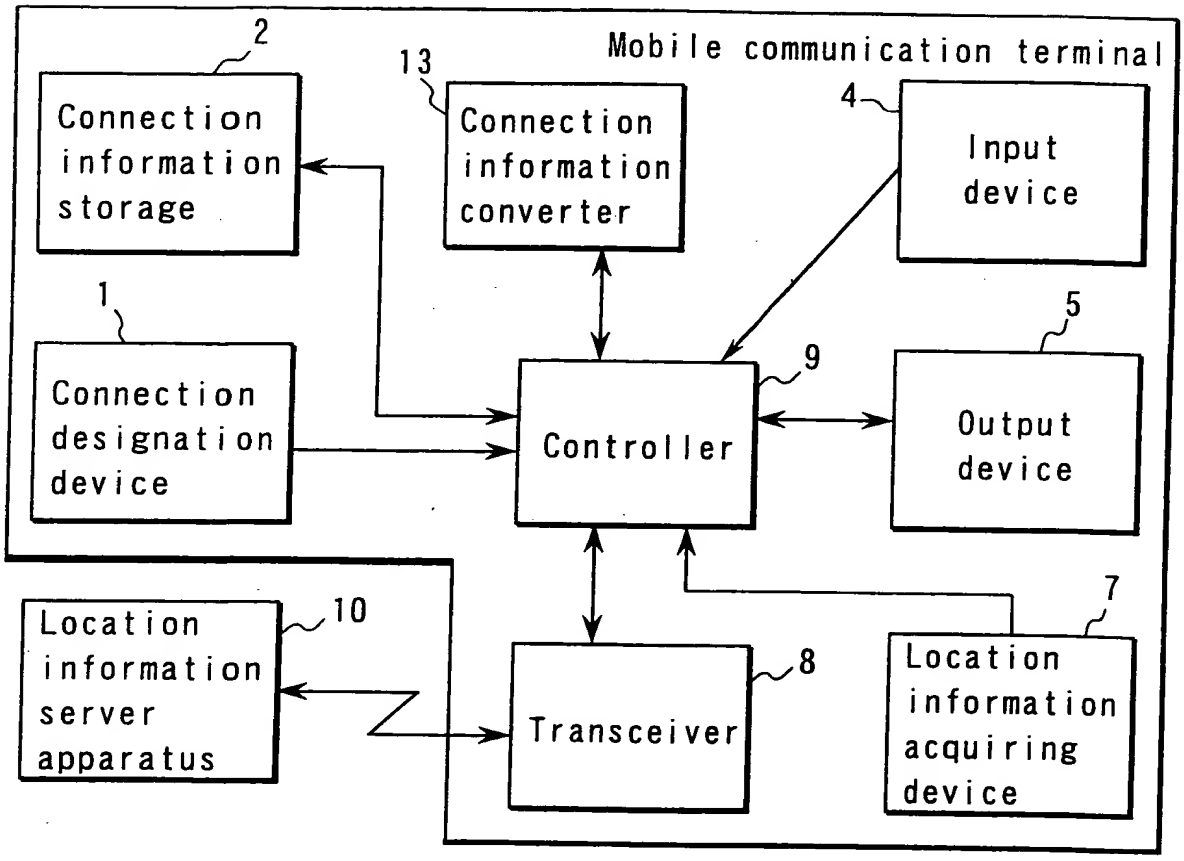


FIG. 6

Abbreviated dialing number	Telephone number	Country code	City code
1	TEL1	81	Remove 0
2	TEL2	81	Remove 0
3	TEL3	81	Remove 0
4	TEL4	81	Remove 0
:	:	:	:

FIG. 7

Country name	Location	International number identification code
C1	(X1, Y1)	N1
C2	(X2, Y2)	N2
:	:	:
:	:	:

FIG. 8

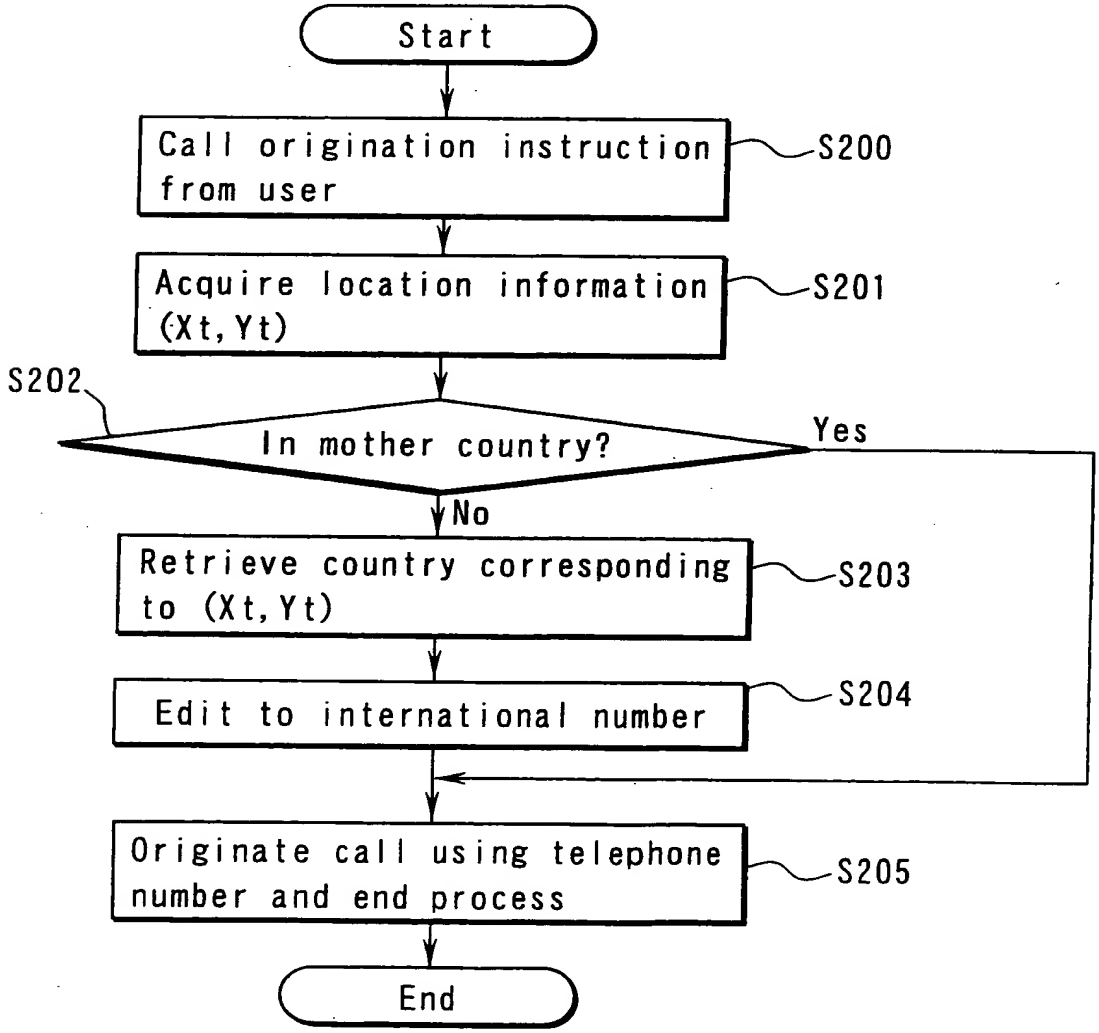


FIG. 9

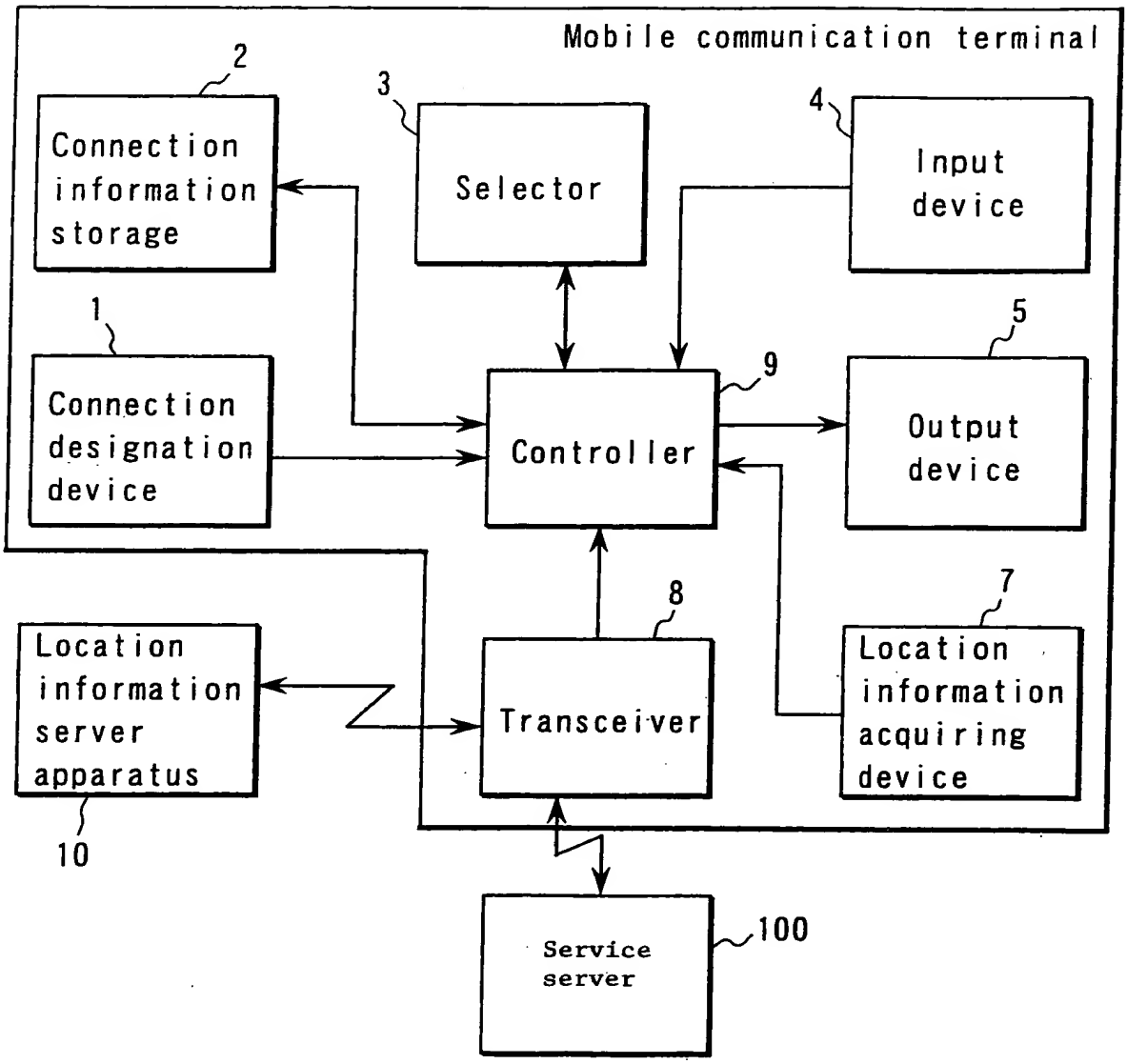
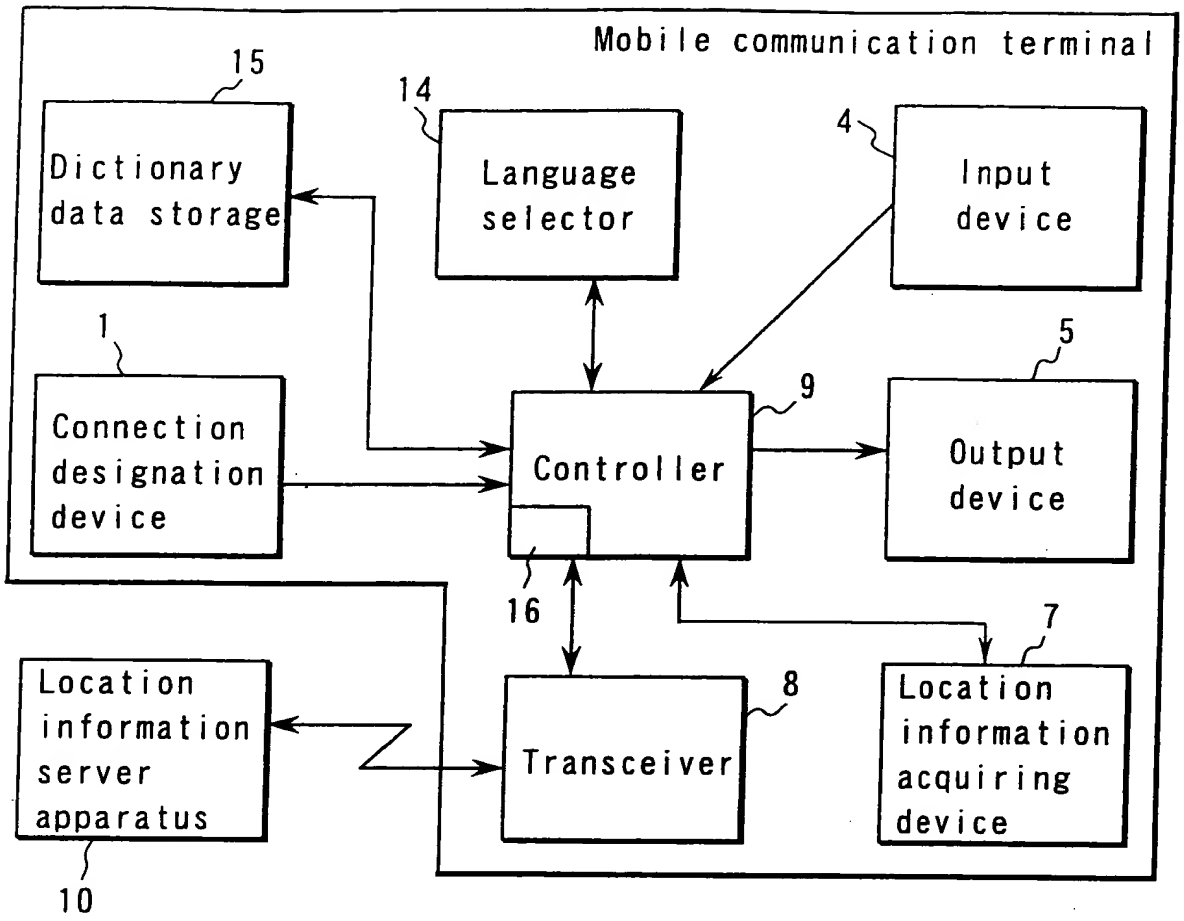

Mobile communication terminal
2
Connection information storage
3
Selector
4
Input device
1
Connection designation device
9
Controller
5
Output device
8
7
Location information server apparatus
10
Transceiver
Location information acquiring device
Service server
100

FIG. 10


Mobile communication terminal
15
Dictionary data storage
14
Language selector
4
Input device
1
Connection designation device
Controller
9
5
Output device
16
7
Location information server apparatus
10
Transceiver
8
Location information acquiring device

[Document] ABSTRACT

[Abstract]

[Object] To provide a call originating method of mobile communication terminal capable of easily performing connection to the communication destination corresponding to the current user location, and a mobile communication terminal using the method.

[Means for Achieving the Object] A call originating method applied to a mobile communication terminal for connecting the mobile communication terminal to a service provider over network using a connection information item corresponding to a service provider and a user's present location, the method characterized by comprising storing a plurality of connection information items corresponding to respective regional service providers, in a memory device, specifying the user's present location, retrieving, from the memory device, the connection information items corresponding to the specified user's present location and a service that is required by the user, requiring the network to connect the mobile communication terminal to the regional service provider, using a retrieved connection information item.

[Elected Figure] FIG. 1